

A new decticine *Ctenodecticus thymi* n. sp. from the NE of the Iberian peninsula (Orthoptera, Tettigoniidae)

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A new decticine Ctenodecticus thymi n. sp. from the NE of the Iberian peninsula (Orthoptera, Tettigoniidae).— A new species of the genus *Ctenodecticus* Bolívar, 1876, *Ct. thymi* n. sp. from the Iberian peninsula is described. The species is similar to *Ct. masferrerii* Bolívar, 1894 and *Ct. granatensis* Pascual, 1978. The male cerci in *Ct. thymi* n. sp. are longer than broad, similar to *Ct. granatensis* and different from *Ct. masferrerii*, in which cerci width and length are similar. Regarding the females, the subgenital plate of the *Ct. thymi* n. sp. has two fossae situated laterally near the margin, in an intermediate position with respect to the position of the other two species. This is the first case on the Iberian peninsula of a species showing intermediate morphological characters in a genus where all species are very different, and suggests the existence of other undescribed species.

Key words: *Ctenodecticus thymi* n. sp., Decticinae, Iberian peninsula, Orthoptera, Tettigoniidae.

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Introduction

In Orthoptera material from Catalonia and adjacent areas in the NE of the Iberian peninsula, a new species of the genus *Ctenodecticus* was found. *Ct. masferrerii* was described in the NE of the Iberian peninsula in 1894 (fig. 1), the only finding to date, whereas up to five species of this genus had been described in the rest of its distribution area this century.

Results

Ctenodecticus thymi n. sp.

Type material

Holotype: Vilamajor (Lleida), 31TCG14, 19 VI 97, 1♂ (J. M. Olmo leg.), deposited in the Museu de Zoologia de Barcelona (register number 99-1114).

Paratypes: Vilamajor (Lleida), 31TCG14, 19 VI 97, 1♂ 2♀ (J. M. Olmo leg.); Foradada

(Lleida), 31TCG34, 2 VII 97, 1♀ (J. M. Olmo leg.); El Miracle (Lleida), 31TCG74, 8 VII 90, 1♂ 1♀ (J. M. Olmo leg.); Estanya (Huesca), 31TBG95, 14 VI 97, 1♂ (J. M. Olmo leg.).

Description

Male

Head: round, slightly longer than broad, in lateral profile oblique, eye prominent, ovate with the anterior margin straight and the posterior margin rounded. Front and clypeus flat.

Thorax: pronotum with the cephalic margin of the disk truncate to slightly emarginated, caudal margin rounded. Lateral lobes with the cephalic margin straight, almost perpendicular; ventral margin rounded; caudal margin nearly straight and highly oblique.

Tegmina: squamipterous. Extending to the middle of second abdominal tergite. Venation patent.

Legs: hind femur markedly broad in the basal third, decreasing in the middle and very slender in the apical third. Plantula of hind tarsus elongated, extending to end of

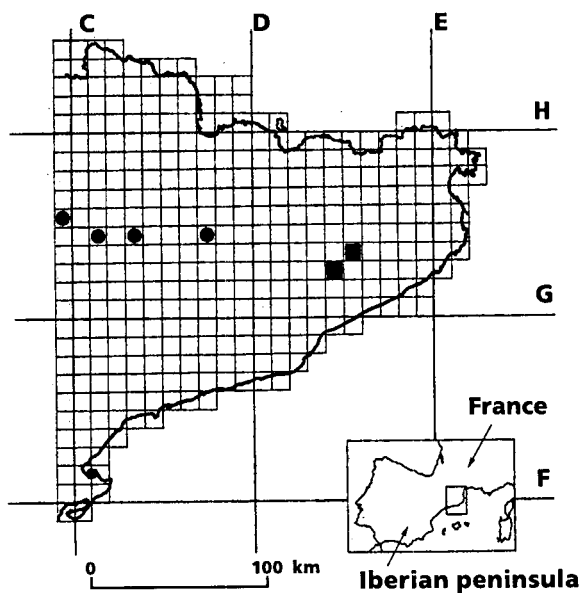
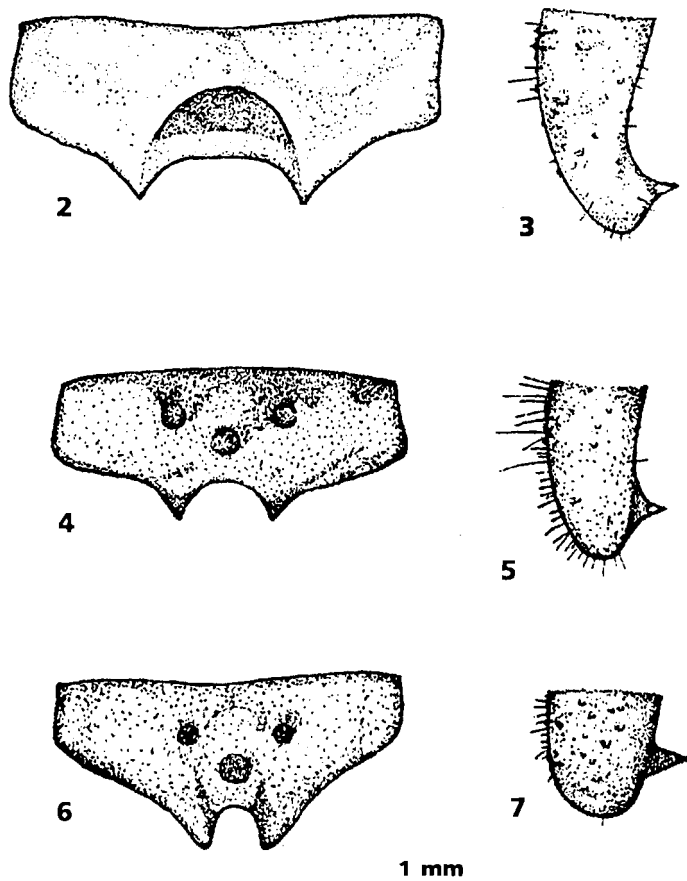


Fig. 1. Distribution of the genus *Ctenodecticus* in the NE Iberian peninsula: ■ *Ct. masferrerii* Bolívar, 1894; ● *Ct. thymi* n. sp.

Distribución del género *Ctenodecticus* en el NE de la península ibérica: ■ *Ct. masferrerii* Bolívar, 1894; ● *Ct. thymi* sp. n.



Figs. 2-7. *Ct. granatensis* Pascual, 1978, ♂: 2. Tenth tergite; 3. Left cercus. *Ct. thymi* n. sp., holotype: 4. Tenth tergite; 5. Left cercus. *Ct. masferrerii* Bolívar, 1894, ♂: 6. Tenth tergite; 7. Left cercus.

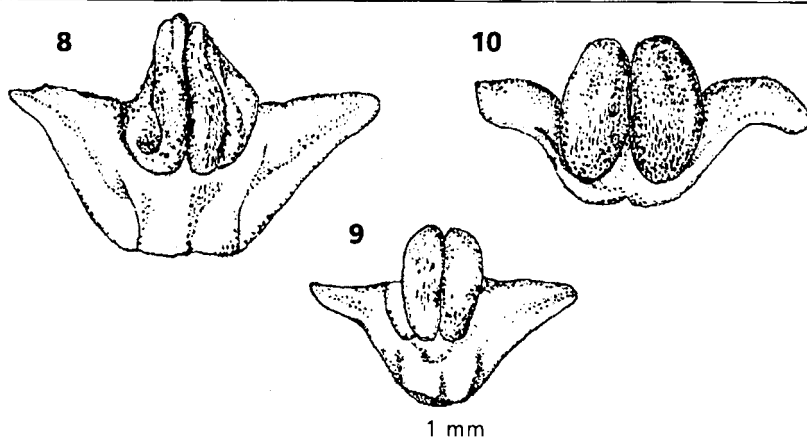
Ct. granatensis Pascual, 1978, ♂: 2. Décimo terguito; 3. Cerco izquierdo. *Ct. thymi* sp. n., holotipo: 4. Décimo terguito; 5. Cerco izquierdo. *Ct. masferrerii* Bolívar, 1894, ♂: 6. Décimo terguito; 7. Cerco izquierdo.

mesotarsus. External plantula slightly longer than internal.

Abdomen: with median carinae. Tenth tergite almost rectangular with two spine-like terminal lobes (fig. 4). Lobes triangular, separate 1.5 x (times) the base lobe. Cercus cylindrical, apex blunt (fig. 5). Internal margin straight and external margin curved. Internal tooth triangular, short and acute. Insertion of tooth visible from above. Portion proximal to inter-

nal tooth nearly twice as long as apical portion. Subgenital plate with a median carina, caudal margin V-shaped, each portion bearing a stylus at apex.

Genitalia: titillators consisting of a pair of densely setose pad-like processes fused (fig. 9), with a membranous weakly sclerotised basal portion. The width of the membranous basal portion 3.5 times the width of the two pad-like processes.



Figs. 8-10. Titillators: 8. *Ct. granatensis* Pascual, 1978; 9. *Ct. thymi* n. sp., holotype; 10. *Ct. masferrerii* Bolívar, 1894.

Titiladores: 8. *Ct. granatensis* Pascual, 1978; 9. *Ct. thymi* sp. n., holotipo; 10. *Ct. masferrerii* Bolívar, 1894.

Female

Similar to male except larger; ovipositor straight (fig. 14), dorsal and ventral margins smooth, shorter than length of hind femur; width of subgenital greater than length with two fossae in the lateral basal area, without median carina, caudal margin V-shaped (fig. 13). Tegmina squamipterous covered by pronotum.

Colour

Brown. Head with the front, clypeus and dorsal surface of eye black, occiput straw-brown. Eyes darker, narrow straw-brown stripe running from posterior margin of dorsal surface of eye to pronotum; lateral lobes of pronotum black with the ventral and caudal margins whitish, disk light-brown, black spots. Internal surface of hind femur with a longitudinal dark stripe in the middle, external surface with a rounded black spot in the dorsal basal area and a longitudinal black stripe in the ventral area. Abdomen with a longitudinal black stripe in the lateral area. Tenth tergite of male with three rounded dark spots in the middle of dorsal surface delimiting a triangular area (fig. 4).

Measurements

See table 1 for type series measurements.

Etymology

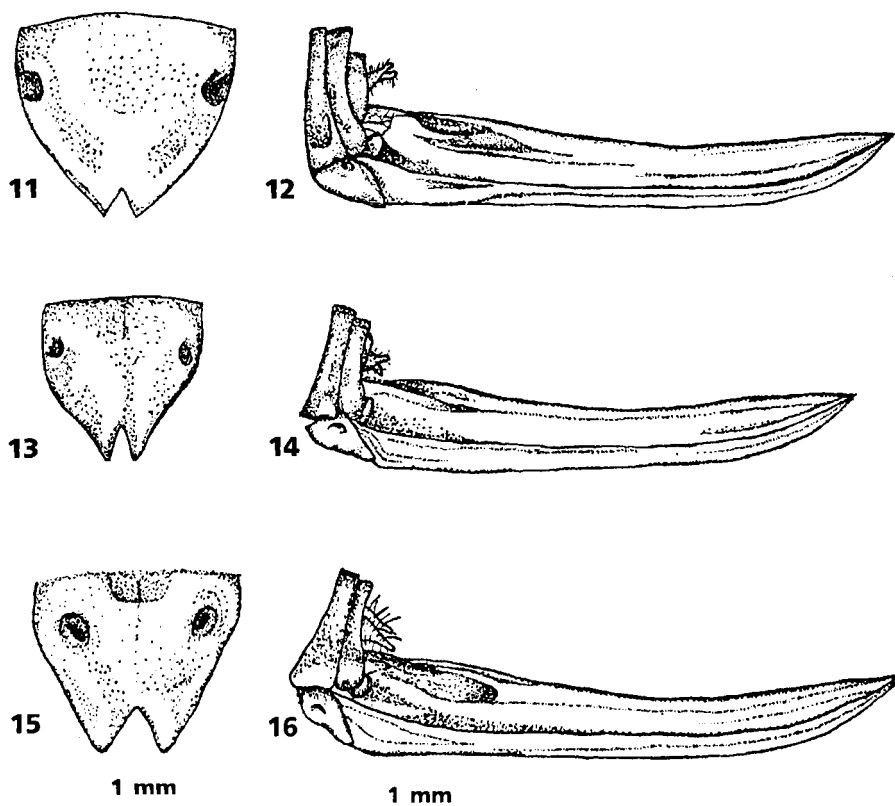
The specific name refers to the plant of the genus *Thymus* L., where all specimens were found.

Ecological notes

Specimens were collected in June and July on *Thymus* plant in daylight. The elevations of localities are between 450 m (Foradada) and 835 m (El Miracle).

Discussion

From the morphological characters of the *Ct. thymi* n. sp., this species belongs to the *Ctenodecticus* genus (HARZ, 1969). Nine species are described in the genus, all distributed in the western Mediterranean region. Six species live in the Iberian peninsula: *Ct. pupulus* Bolívar, 1876; *Ct. masferrerii* Bolívar, 1894; *Ct. ramburi* Morales Agacino, 1956; *Ct. major* Pascual, 1978; *Ct. granatensis* Pascual, 1978 and *Ct. lusitanicus* Barranco & Pascual, 1992. The other three species live in the Tirrenic region of North Africa: *Ct. bolivari* Targioni Tozzetti, 1881; *Ct. vasarensis* Finot, 1893 and *Ct. algericus* Uvarov, 1924, although *Ct. bolivari* also appears on two Mediterranean Islands: Sardinia



Figs. 11-16. *Ct. granatensis* Pascual, 1978, ♀: 11. Subgenital plate; 12. Ovipositor. *Ct. thymi* n. sp., ♀: 13. Subgenital plate; 14. Ovipositor. *Ct. masferreri* (Bolívar, 1894), female: 15. Subgenital plate; 16. Ovipositor.

Ct. granatensis Pascual, 1978, ♀: 11. Placa subgenital; 12. Ovipositor. *Ct. thymi* sp.n., ♀: 13. Placa subgenital; 14. Ovipositor. *Ct. masferreri* (Bolívar, 1894), hembra: 15. Placa subgenital; 16. Ovipositor.

and Sicily. The North African group is characterised by males having the tenth tergite with two long spine-like terminal lobes, somewhat long and divergent depending on the species. In this group, the cercus of *Ct. bolivari* and *Ct. vasarensis* is long with a curved terminal tooth. The other species of this North African group, *Ct. algericus*, has a short conic cercus with an internal tubercle (GALVAGNI, 1990).

Morphological characters of the Iberian species vary considerably. The new species, closely resembles *Ct. granatensis* (PASCUAL, 1978) and *Ct. masferreri* (BOLÍVAR, 1894), al-

though some of its morphological characters are more similar to the latter.

In relation to males, the tenth tergite of *Ct. granatensis* and *Ct. masferreri* has two spine-like terminal lobes (figs. 2, 6). The tenth tergite of *Ct. thymi* n. sp. (fig. 4) also presents two lobes in the posterior margin. These are more separated than *Ct. masferreri* (fig. 6) but not as much as in *Ct. granatensis* (fig. 2). The tenth tergite of *Ct. thymi* n. sp. is rectangular as in *Ct. granatensis*, whereas in *Ct. masferreri* it is trapezoidal. With reference to the cercus, *Ct. thymi* n. sp. (fig. 4) shows intermediate char-

Table 1. Measurements of *Ctenodecticus thymi* n. sp. (in mm). Min-Max . Minimum-maximum); \bar{x} . Mean; SD. Standard desviation.

Medidas de Ctenodecticus thymi sp. n. (en mm). Min-Max. Mínimo-máximo; \bar{x} . Media; SD. Desviación estándar.

	Holotype	Paratypes					
		σ^7 (n=4)			φ (n=3)		
		Min-Max	\bar{x}	SD	Min-Max	\bar{x}	SD
Body length	7.25	6.15-6.40	6.26	0.12	7.65-9.50	8.48	0.93
Pronotum length	3.10	2.85-2.95	2.90	0.05	3.20-3.25	3.23	0.03
Tegmina length	0.45	0.45-0.90	0.63	0.24	0.10-0.15	0.13	0.03
Hind femur length	7.90	7.20-7.45	7.30	0.13	8.40-8.90	8.56	0.29
Ovipositor length	-	-	-	-	6.50-6.65	6.58	0.08

acteristics between the two species (*Ct. granatensis* and *Ct. masferreri*). The cerci in *Ct. thymi* n. sp. are longer than broad, similar to *Ct. granatensis* (fig. 3), whereas in *Ct. masferreri* the cerci are approximately as broad as long (fig. 7). The titillators of the Iberian species of the genus *Ctenodecticus* had not been described up to date, except for *Ct. masferreri* (HARZ, 1969). In the present work, the titillators of *Ct. thymi* n. sp. (fig. 9) and *Ct. granatensis* (fig. 8) are described, having been detailed in all North African species (GALVAGNI, 1989). The titillators of the new species (fig. 9) are similar to those of *Ct. masferreri* (fig. 10). Although in *Ct. thymi* n. sp. the rounded shape of the pad-like processes is smaller than in *Ct. masferreri*, proportionally to the membranous basal portion. However, the shape of the membranous basal portion of *Ct. thymi* n. sp. is more similar to the trapezoidal shape of that of *Ct. granatensis* (fig. 8).

With reference to females, the ovipositors of *Ct. granatensis*, *Ct. masferreri* and *Ct. thymi* n. sp., are very similar in relation to their shape and size (figs. 12, 14, 16). In these three species, the subgenital plate of the female has two lateral fossae, absent in the other species of the genus (figs. 11, 13, 15). Characteristics of the subgenital plate of *Ct. thymi* n. sp. are between those of *Ct. granatensis* and *Ct. masferreri*, with the fossae situated laterally, near the margin. In *Ct. masferreri* these fossae are close to each other,

while in *Ct. granatensis* they are near the margin and more separate.

The genus *Ctenodecticus* is particularly heterogeneous and is clearly grouped for some shared characters. For a hypothetical division of this genus, it has been suggested that one subgenera should be created for each species (HARZ, 1969). The discovery of the new species described herein, the first described in this area in the present century, has the importance of being the first species in the Iberian peninsula with morphological characteristics somewhere between two species (*Ct. masferreri* and *Ct. granatensis*). As this genus is a very small species (body size between 8.5 to 13.5 mm) with a nymphal appearance (squamipetrous tegmina) it is not easily observed. This possibly suggests that other species remain undescribed as yet.

More extensive sampling of the genus *Ctenodecticus* is needed as well as a comprehensive revision of all the known species in order to reveal their phylogenetic relationships.

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Resumen

Un nuevo decticino Ctenodecticus thymi sp. n. del NE de la península ibérica (Orthoptera, Tettigoniidae)

Se describe una nueva especie del género *Ctenodecticus* Bolívar, 1876, *Ct. thymi* sp. n. de la península ibérica, cuya especie más próxima respecto a su distribución es *Ct. masferrerii* (fig. 1). *Ct. thymi* sp. n. es similar a *Ct. masferrerii* Bolívar, 1894 y a *Ct. granatensis* Pascual, 1978.

En los machos el décimo terguito de *Ct. thymi* sp. n. es rectangular (fig. 4) al igual que en *Ct. granatensis* (fig. 2), mientras que en *Ct. masferrerii* es trapezoidal (fig. 6). Los cercos de los machos en *Ct. thymi* sp. n. son más largos que anchos (fig. 5), de forma similar a los de *Ct. granatensis* (fig. 3); no es así en *Ct. masferrerii* (fig. 7), que presenta los cercos tan anchos como largos. Los titiladores de *Ct. thymi* sp. n. (fig. 9) son similares a los de *Ct. masferrerii* (fig. 10), aunque la forma de la porción basal membranosa de *Ct. thymi* sp. n. es más parecida, por su forma trapezoidal, a la de *Ct. granatensis* (fig. 8).

Respecto de las hembras, la placa subgenital de *Ct. thymi* sp. n. presenta dos fosas

situadas lateralmente próximas al margen, en una posición intermedia respecto a *Ct. masferrerii* y *Ct. granatensis* (figs. 11-16). Esta nueva especie representa el primer caso en este género que muestra características morfológicas intermedias del resto de especies de la península ibérica, lo cual sugiere la posibilidad de que existan otras especies por describir en esta zona.

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